

What is claimed is:

[Claim 1] 1. A method of fabricating a gate, comprising the steps of:

providing a substrate;

forming a patterned mask layer over the substrate, wherein the patterned mask layer exposes an area on the substrate for forming the gate;

forming a gate on the substrate within the exposed area; and

removing the mask layer.

[Claim 2] 2. The method of claim 1, wherein the step of forming the gate further comprises a step of forming a metallic layer over the mask layer and inside the exposed area such that the metallic layer formed over the mask layer is apart from the metallic layer formed inside the exposed area.

[Claim 3] 3. The method of claim 2, further comprising a step of forming an oxidation-resistant layer over the metallic layer after the step of forming the metallic layer.

[Claim 4] 4. The method of claim 3, wherein the oxidation-resistant layer is selected from a group consisting of an alloy of metals and a metal silicide compound.

[Claim 5] 5. The method of claim 1, wherein the step of forming the gate comprises performing a physical vapor deposition process.

[Claim 6] 6. The method of claim 1, wherein the mask layer comprises a photoresist layer.

[Claim 7] 7. A method of fabricating a pixel unit, comprising the steps of:

providing a substrate;

forming a patterned mask layer over the substrate, wherein the patterned mask layer exposes an area on the substrate for forming the gate;

forming a gate on the substrate within the exposed area;

removing the mask layer;

forming an insulating layer over the substrate to cover the gate;
forming a channel layer over the insulating layer above the gate;
forming a source and a drain over the channel layer;
forming a passivation layer over the substrate, wherein the passivation layer has an opening that exposes a portion of the drain; and
forming a pixel electrode over the passivation layer such that the pixel electrode is electrically connected to the drain via the opening.

[Claim 8] 8. The method of claim 7, wherein the step of forming the gate further comprises forming a metallic layer over the mask layer and inside the exposed area such that the metallic layer formed over the mask layer is apart from the metallic layer formed within the exposed area.

[Claim 9] 9. The method of claim 8, further comprising a step of forming an oxidation-resistant layer over the metallic layer after the step of forming the metallic layer.

[Claim 10] 10. The method of claim 9, wherein the oxidation-resistant layer is selected from a group consisting of an alloy of metals and a metal silicide compound.

[Claim 11] 11. The method of claim 7, wherein the step of forming the gate comprises performing a physical vapor deposition process.

[Claim 12] 12. The method of claim 7, wherein the mask layer comprises a photoresist layer.

[Claim 13] 13. A method of fabricating a thin film transistor, comprising the steps of:

providing a substrate;
forming a patterned mask layer over the substrate, wherein the mask layer exposes an area on the substrate for forming the gate;
forming a gate within the exposed area;
removing the mask layer;
forming an insulating layer over the substrate to cover the gate;

forming a channel layer over the insulating layer above the gate; and forming a source and a drain over the channel layer.

[Claim 14] 14. The method of claim 13, wherein the step of forming the gate further comprises forming a metallic layer over the mask layer and inside the exposed area such that the metallic layer formed over the mask layer is apart from the metallic layer formed within the exposed area.

[Claim 15] 15. The method of claim 14, further comprising a step of forming an oxidation-resistant layer over the metallic layer after the step of forming the metallic layer.

[Claim 16] 16. The method of claim 15, wherein the oxidation-resistant layer is selected from a group consisting of an alloy of metals and a metal silicide compound.

[Claim 17] 17. The method of claim 13, wherein the step of forming the gate comprises performing a physical vapor deposition process.

[Claim 18] 18. The method of claim 13, wherein the mask layer comprises a photoresist layer.